

ABSTRACT

A drop tube type particulate crystalline body producing device is a device for creating a substantially spherical crystalline body by solidifying a particulate melt of an inorganic material while allowing it to free-fall inside a drop tube. This device 1 has a melt formation device 2, drop tube 3, gas flow formation means for forming inside the drop tube 3 a gas flow of cooling gas, and recovery mechanism 5 for recovering a crystalline body 25a from the lower end of the drop tube 3. The drop tube 3 comprises an introducing tube 30, cooling tube 31, and solidification tube 32, where the cooling tube 31 is configured such that the cross sectional area thereof becomes smaller toward the bottom such that the cooling gas flow speed becomes substantially equal to the free fall speed of the particulate melt, and the solidification tube 32 is connected to the lower end of the cooling tube 31 and has a cross sectional area enlarged discontinuously from the lower end of the cooling tube 31. In a proximity of the upper end of the solidification tube 32, the flow speed of the cooling gas is rapidly reduced and the gas pressure increases, whereby a crystal nucleus is generated in the melt in a supercooled state, and the melt is crystallized at once.